

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF DELAWARE

EAGLE VIEW TECHNOLOGIES, INC.	)	
and PICTOMETRY INTERNATIONAL	)	
CORP.,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	C.A. No. 21-1852 (RGA)
	)	
ROOFR, INC.,	)	
	)	
Defendant.	)	

**DEFENDANT ROOFR INC.'S OPENING BRIEF IN SUPPORT OF ITS  
MOTION TO DISMISS THE FIRST AMENDED COMPLAINT**

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## I. INTRODUCTION

Plaintiffs Pictometry International Corp. and Eagle View Technologies, Inc. allege that Defendant Roofr Inc. infringes U.S. Patent Nos. 8,170,840 (the “’840 patent”), 9,183,538 (the “’538 patent”), and 10,648,800 (the “’800 patent”). These patents are directed to abstract ideas and are not patent eligible under 35 U.S.C. § 101.

The ’800 patent claims the abstract idea of selecting a roof from an image. The claims merely require displaying an image for a location, allowing a user to select a roof within the image, confirming that selection, and then providing an unspecified report. The claims do not require any unconventional implementation; to the contrary, they use third-party image services (*e.g.*, Google Earth) and standard computer inputs (*e.g.*, a mouse) to select a roof location and press a confirmation button. Such routine software processes are ineligible for patent protection.

The ’538 patent claims the abstract idea of estimating a roofing area using an image of a roof. The claims recite conventional steps for providing an image of a roof at a location, estimating the area of the roof using well-known geometric calculations, and generating a generic roof report. The claims do not require any unconventional way to estimate or automate estimation of the roofing area—they would even cover manual input of roof measurements by a user applying basic geometry to compute the area of a shape. Such abstract claims, which preempt the very idea of using an image of a roof to estimate roofing area, are impermissible.

The ’840 patent similarly claims the abstract idea of determining the pitch (angle) of roof sections using an image of a roof. The claims merely require overlaying a measurement tool (*e.g.*, a protractor) on an aerial image of a roof, receiving a pitch measurement based on the overlay, and updating an unspecified “model” of the roof based on the pitch. Here, too, the claims do not recite any unconventional way to measure or automate measurement of pitch using

an image, nor any specific way of updating a model of a roof. Rather, each step may be implemented using generic computer inputs and well-known existing techniques. Such claims that preempt the very idea of measuring the pitch of a roof from an image are ineligible.

In an attempt to rescue its patents from ineligibility, Plaintiffs’ First Amended Complaint (“FAC”) alleges its technology is “inventive, revolutionary, and critical” by citing favorable rulings in other cases involving different patents. *See* D.I. 12 ¶¶ 17-26. But only one patent at issue here—the ’840 patent—has previously been asserted, and Plaintiffs’ bare conclusions about the merits of the purported inventions are not tied to the claimed inventions.

## **II. NATURE AND STAGE OF THE PROCEEDINGS**

Pictometry filed this lawsuit against Roofr on December 29, 2021, asserting infringement of the ’800 patent and the ’538 patent. *See* D.I. 1. On March 11, 2022, Roofr moved to dismiss under § 101. D.I. 8. In response, Pictometry filed an amended complaint on April 1, 2022, adding Eagle View as a plaintiff and alleging infringement of the ’840 patent. D.I. 12.

## **III. SUMMARY OF ARGUMENT**

1. The claims of the asserted patents do not satisfy the two-part test for patent eligibility under *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014).

2. Under the first step of *Alice*, the claims of the asserted patents are directed to a patent-ineligible abstract idea.

3. Under the second step of *Alice*, the claim limitations of the asserted patents, considered individually and as ordered combinations, fail to recite an inventive concept.

## **IV. STATEMENT OF FACTS**

Roofr offers an all-in-one sales platform for roofing contractors. The platform’s innovative tools enable roofers to generate accurate roof measurement reports and estimates for roofing projects, all within minutes and without the need to conduct a physical site visit. One



tool Roofr offers is a roof measurement tool, which generates a roof measurement report. The tool may use aerial imagery of a roof to provide a detailed analysis of the roof's layout and important dimensions. This tool also provides a virtual protractor that users may overlay onto a street-level photograph of a building to manually measure and input pitch measurements. Plaintiffs allege Roofr's platform infringes the asserted patents by allowing customers to enter measurements and generate roof reports. D.I. 12 ¶¶ 27-75.

Before filing this case, Plaintiffs sued several other companies for patent infringement, notably, Xactware. *See, e.g., EagleView Techs., Inc. v. Xactware Sols., Inc.*, 485 F. Supp. 3d 505 (D.N.J. 2020). The FAC cites to rulings in those cases as proof that the asserted patents are directed to "inventive concepts" and "technological improvements." D.I. 12 ¶ 22. In *Xactware*, however, the New Jersey court found that the patents at issue claimed methods of correlating points on two images of a roof from different perspectives. *See id.*; *Xactware*, 485 F. Supp. 3d at 511. The case against Roofr is not comparable. Plaintiffs have not asserted patents directed to correlating multiple images of a roof because Roofr does not use those techniques. Instead, Plaintiffs assert one previously asserted patent (the '840 patent) and two never-before asserted patents that all claim basic software tools for measuring roofs in images and generating reports.

#### **A. The '800 Patent**

The '800 patent is directed to the abstract idea of selecting a roof from an image. Nothing more. Claim 1 is representative and generally describes the following steps: (1) receiving a location; (2) providing an image of the location; (3) providing an input for a user to select a roof within the image; (4) receiving the user selection; (5) providing an input for the user to confirm the selection; and (6) providing a "report" for the selected roof. *See* '800 patent, cl. 1.

The specification of the '800 patent includes exemplary flow charts describing the alleged invention. *Id.*, 1:66-2:4. Figure 3 in particular corresponds directly to the steps recited in

claim 1. Figure 3 illustrates four steps: (1) “location data”; (2) “aerial imagery with marker”; (3) “move marker on building”; and (4) “user acceptance signal”. *See id.*, Fig. 3.

At the first step “location data . . . is entered” and corresponding “[a]erial imagery with a marker is provided.” *Id.*, 11:39-40. These steps are shown in Figs. 4A and 4B. Next, a “person moves the marker on the image of the building” and the user signals “acceptance of that marker position” (*i.e.*, confirms their selection). *Id.*, 11:40-42. These steps are shown in Figs. 4C and 4D. Finally, an optional “report” may be delivered, *id.*, 7:35-39, including “one or more pages or screen shots, or both, made available to a user including aerial imagery and/or data from such imagery.” *Id.*, 4:36-39. Per the specification, these steps may all be performed using routine computer processes (*e.g.*, mouse clicks or check boxes). *See id.*, 3:12-15, 10:19-22.

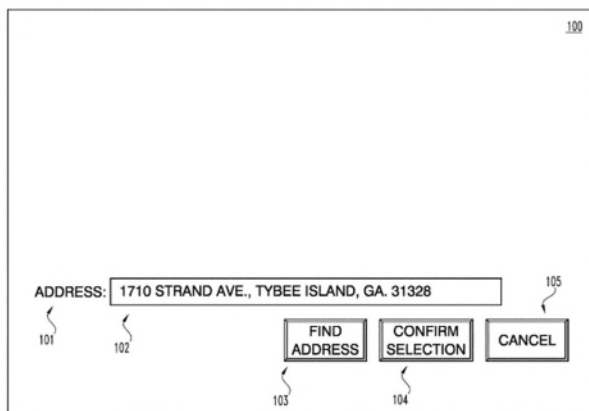


Fig. 4A

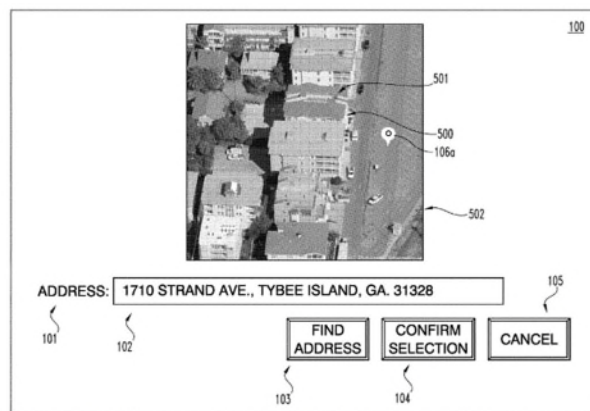


Fig. 4B

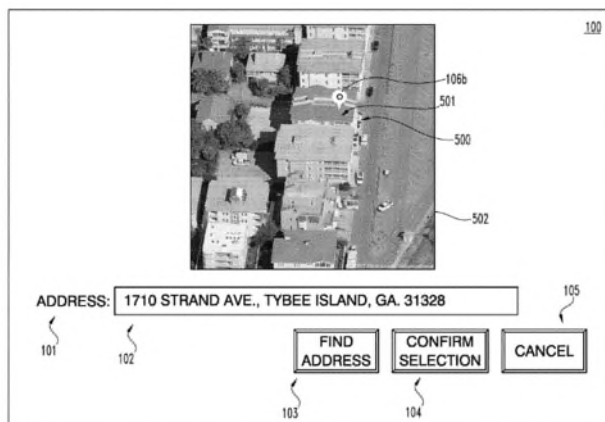


Fig. 4C

Fig. 4D

## **B. The '538 Patent**

The '538 patent is directed to the abstract idea of estimating a roofing area using an image of a roof. Claim 1 is representative and boils down to the following steps: (1) identifying a geographic location of a roof; (2) determining a footprint and predominant pitch by analyzing an image of the roof; (3) determining an estimated roofing area based on the predominant pitch and footprint of the roof; and (4) generating a report that includes an image of the roof and the estimated roofing area. *See* '538 patent, claim 1.

Like the '800 patent, the '538 patent provides (in Figure 6) a flow chart describing the process recited in the asserted claims. Figure 6 illustrates five steps: (1) "host system receives roof request order"; (2) "footprint of roof is obtained"; (3) "predominant pitch value determined"; (4) "roofing area obtained"; and (5) "roof report provided." *See id.*, Fig. 6. In the specification, these functional steps are performed by a "roof report website" hosted on a generic computer performing routine functions. *Id.*, 11:37-13:4. The specification provides scant detail about how the image of the roof is analyzed, aside from noting that it may be performed using known prior art techniques and basic mathematical formulas. *See id.*, 11:55-12:39.

## **C. The '840 Patent**

The '840 patent is directed to the abstract idea of determining the pitch of a roof section using an aerial image of a roof. Claim 1 is representative and recites the following steps: (1) displaying an aerial image of a roof, (2) overlaying on the aerial image a tool that indicates the pitch of a planar roof section, (3) receiving a pitch indication for a planar roof section based on the tool, and (4) modifying a "model" of the roof based on the pitch. *See* '840 patent, claim 1.

The '840 patent uses the term "pitch determination marker" to refer to a tool that indicates pitch. *See id.* The specification explains this marker is "a protractor tool" that "can be directly manipulated by the operator" through a user interface "in order to specify the pitch of a

section of the building roof.” *Id.*, 12:40-48. The “‘protractor’ arm is adjustable by the operator to specify roof pitch.” *Id.*, 12:49-54. Figure 5B shows an example of the marker.



**Fig. 5B**

Importantly, the user must manipulate the “pitch determination marker” and manually determine and input the pitch value. *See id.*, 12:12:40-13:39. The specification explains that the generic steps recited by the claims may be implemented on a generic computer using conventional user input and data processing functions. *See id.*, 16:2-40, 17:1-14, 17:34-50.

## **V. LEGAL STANDARDS**

To survive a Rule 12(b)(6) motion, a complaint must allege “enough facts to state a claim to relief that is plausible on its face.” *Bell Atl. Corp. v. Twombly*, 550 U.S. 544, 570 (2007). While factual allegations are accepted as true, the Court need not “accept unsupported conclusions and unwarranted inferences, or a legal conclusion couch as a factual allegations.” *Morrow v. Balaski*, 719 F.3d 160, 165 (3d Cir. 2013) (citation omitted).

“The Supreme Court, setting up a two-stage framework, has held that a claim falls outside [35 U.S.C.] § 101 where (1) it is ‘directed to’ a patent-ineligible concept, *i.e.*, a law of nature, natural phenomenon, or abstract idea, and (2), if so, the particular elements of the claim, considered ‘both individually and as an ordered combination,’ do not add enough to ‘transform

the nature of the claim into a patent-eligible application.” *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) (quotation marks omitted) (quoting *Alice*, 573 U.S. at 217). The first step of the *Alice* framework considers the “focus” of the claims—*i.e.*, their “character as a whole.” *Id.* (quotation marks and citation omitted). If the focus and character is an abstract idea, then the analysis turns to the second step, which is to “search for an inventive concept—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [abstract idea] itself.” *Alice*, 573 U.S. at 217-18 (quotation marks and citation omitted).

## **VI. ARGUMENT**

The asserted patents are invalid under 35 U.S.C. § 101 because the claims in each fail the two-step framework set forth in *Alice*. Each patent is addressed separately below.

### **A. The ‘800 Patent**

#### **1. Step One of *Alice***

##### **(a) The Claims Are Directed to an Abstract Idea**

The first step of *Alice* requires the Court to consider whether the focus of the claims, their character as a whole, is directed to an abstract idea. *See Elec. Power*, 830 F.3d at 1353. “[W]hile the specification may help illuminate the true focus of the claim, when analyzing patent eligibility, reliance on the specification must always yield to the claim language in identifying that focus.” *SynKloud Techs., LLC v. HP Inc.*, 490 F. Supp. 3d 806, 811 (D. Del. 2020).

Claim 1 of the ‘800 patent is representative of all claims in the ‘800 patent and is a classic example of an abstract idea: selecting a roof from an image. The recited elements—displaying a roof image that corresponds to a location, receiving a designation of the roof within that image, receiving a user input to confirm that the designation corresponds to the roof within the image,

and providing a roof report—amount to nothing more than a generic implementation of the abstract idea on conventional computer hardware using routine functions.

Beginning with the first limitation of Claim 1, “providing visual access to a first image corresponding to the first location data,” the specification states that the imagery “may come from a variety” of well-known, public sources, such as Google Earth imagery. ’800 patent, 10:8-13. Next, the “first computer input capable of signaling a designation from a user of a building roof structure within the first image” may be conventional user input from a standard computer device, such as “click and dragging via computer mouse, arrows, or otherwise.” *Id.*, 10:19-22; *see also id.*, 3:12-15 (defining “computer input” as data “provided by a computer user,” including via “mouse clicks,” “check boxes,” and “dialog boxes”). Similarly, the “second computer input capable of signaling user-acceptance of the building roof structure” may be any standard computer input that prompts a user to confirm a selection, such as a “confirm selection button” or a “checkbox.” *Id.*, 10:25-28. Finally, “providing a report for the building roof structure” lacks any detail, and merely recites generic, trivial post-solution activity. Indeed, the claimed report may be any generic display of information, such as “one or more pages or screen shots, or both . . . including aerial imagery and/or data from such imagery,” *id.*, 4:36-39. Notably, the patent does not disclose any unconventional or improved method for obtaining image data, processing user input, or generating a report. The fact that “the claimed steps are captured in a simple flow chart” (*e.g.*, in Fig. 3) further confirms the “abstract nature” of the claims. *Realtime Data LLC v. Array Networks Inc.*, 537 F. Supp. 3d 591, 607 (D. Del. 2021).

As demonstrated above, the “focus of the claimed advance over prior art” is merely allowing a user to use a conventional computer user interface to select and confirm selection of a roof from an image. *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257, 1263

(Fed. Cir. 2016) (finding abstract claims where the “essential advance” was not in the technological process, but in the display of certain defined content). The specification concedes that using software to generate roof reports is not new, noting that “for many years” companies offered “estimation services and reporting software reports using aerial imagery.” ’800 patent, 1:26-32. And although the specification makes a vague reference to “non-obvious features that enhance convenience, flexibility and/or accuracy,” *id.*, 1:32-36, these supposed benefits are never linked to anything recited in the claims. Thus, the ’800 patent recites no more than “broad functions and [is] not directed to any technological improvement for performing those functions.” *Interval Licensing LLC v. AOL Inc.*, 896 F.3d 1335, 1346 (Fed. Cir. 2018).

(b) The Claims Do Not Improve Computer Functionality

When evaluating computer-implemented claims, courts also examine whether the claims “purport to improve the functioning of the computer itself,” *Alice*, 573 U.S. at 225, or by contrast whether “computers are invoked merely as a tool” to implement an abstract idea. *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016); *see also Elec. Power*, 830 F.3d at 1354 (distinguishing between “computer-functionality improvements” and “uses of existing computers as tools in aid of processes focused on ‘abstract ideas’”).

The ’800 patent does not identify any technological problem solved by the claims. In the FAC, however, Plaintiffs assert the ’800 patent “invented a way to utilize low resolution imagery and/or incorrectly geocoded data to create highly reliable roof reports.” FAC ¶ 26. But the ’800 patent does not even disclose any improved process for geocoding data or processing low-resolution images; it merely discloses a conventional user interface where the *user* manually selects and confirms a roof in an image. Reciting generic user interface functions in service of an abstract idea does not constitute an improvement to computer functionality. *Move, Inc. v.*

*Real Estate All. Ltd.*, 721 F. App'x 950, 956 (Fed. Cir. 2018) (holding that “the ideas of storing available real estate properties in a database and selecting and displaying a particular geographic area” are not “technological improvements”). To the contrary, the patent is clear that the claims can be performed using standard computer inputs, such as clicking buttons with a mouse. *See Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378, 1384-85 (Fed. Cir. 2019) (arranging trading information in a display did not solve a technological problem). Claim 1 “thus fit[s] into the familiar class of claims that do not ‘focus . . . on [] an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools.’” *SAP Am. Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1168 (Fed. Cir. 2018) (alterations in original) (citation omitted) (holding that “reporting or displaying the results of the analysis” is “all abstract”).

(c) Courts Have Routinely Held Similar Claims To Be Abstract

Analogous Federal Circuit precedent confirms the claims of the '800 patent are directed to an abstract idea. The Federal Circuit has repeatedly held similar claims directed to use of an interactive interface to access and display data are abstract. *See, e.g., Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084, 1092-95 (Fed. Cir. 2019); *Move*, 721 F. App'x at 955; *see also, e.g., Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340-41 (Fed. Cir. 2017).

In *Trading Technologies*, the claim at issue was directed to displaying trading bids and offers that pertained to a user's order, and then allowing a user to make an order “by ‘selecting’ and ‘moving’ an order icon to a location along [a] price axis.” 921 F.3d at 1092. The Federal Circuit found the claim abstract, as the claim described receiving information, displaying that information, and assisting a user in making an order. *See id.* The fact that the claim was “computer-based” did not save the claims, as the specification acknowledged that the claimed graphical user interface could be displayed on any computing device. *Id.* at 1093.



Similarly, in *Move*, the claims at issue involved using a computer to create a property database, display a geographic region on a map, zoom in on a desired geographic region, and identify properties from the database within that geographic region. 721 F. App'x at 955-56. The Federal Circuit concluded that the claims were directed to the abstract idea of using a computer to search for real estate, and “contain[ed] no technical details or explanation of how to implement the claimed abstract idea using the computer.” *Id.* at 955.

Like the claims found abstract in *Trading Technologies* and *Move*, claim 1 of the '800 patent is directed to little more than a user interface for accessing and displaying data—*i.e.*, selecting a roof from an image. The claimed process enables a user to type in a geographic location and select a roof shown in the image associated with that location. After a user designates a roof structure and confirms the designation, the claimed process displays an unspecified report for the roof. These steps are performed using routine computer processes for collecting and displaying information. The specification even acknowledges that the data recited in the claims is generic and conventional (*e.g.*, Google Earth images, which had existed for years before the patent's priority date, and generic reports containing pages and/or screenshots).

District courts have similarly found abstract comparable claims directed to using a computer to access and identify content from a map or an image. *See, e.g., Int'l Bus. Machs. Corp. v. Zillow Grp., Inc.*, 2021 WL 2982372, at \*12 (W.D. Wash. July 15, 2021) (claims directed to using interface to select portions of displayed map and updating lists of items in selected portion); *CertusView Techs., LLC v. S & N Locating Servs., LLC*, 111 F. Supp. 3d 688, 722 (E.D. Va. 2015) (claims directed to receiving an aerial image, adding a mark to the image, and storing the image with data including geographical coordinates and property address), *aff'd*, 695 F. App'x 574 (Fed. Cir. 2017).

## 2. Step Two of *Alice*

The second step of *Alice* requires the court to “consider the elements of each claim both individually and ‘as an ordered combination’ to determine whether the additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 573 U.S. at 217 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 78-79 (2012)). Step two “looks more precisely at what the claim elements add” to determine whether “they identify an inventive concept in the application of the ineligible matter to which . . . the claim is directed.” *SAP*, 898 F.3d at 1167 (quotation marks and citation omitted). The inventive concept must be more than “well-understood, routine, conventional activity.” *Mayo*, 566 U.S. at 73.

Here, the claimed processes “are recited at a high level of generality,” and invoke only generic computers and routine software functions. *See Interval Licensing*, 896 F.3d at 1347. The claims take a basic idea—*i.e.*, picking a point on an image—and simply apply it on a computer. For example, claim 1 recites user inputs to a computer—*e.g.*, “a second computer input capable of signaling user-acceptance of the building roof structure location,” where “user-acceptance is one or more affirmative steps undertaken by the user to confirm the designation of the building roof structure location.” But these inputs are routine software functions running on a generic computer “that are not themselves plausibly asserted to be an advance,” and thus “amount[] to a recitation of what is ‘well-understood, routine, [and] conventional.’” *SAP*, 898 F.3d at 1170 (alteration in original) (citation omitted); *see also Two-Way Media Ltd. v. Comcast Commc’ns, LLC*, 874 F.3d 1329, 1339 (Fed. Cir. 2017) (no inventive concept where claims only required “conventional computer and network components operating according to their ordinary functions”). Indeed, as noted above, the specification expressly teaches that these user inputs are provided using a standard computer mouse or keyboard. ’800 patent, 10:19-22, 10:30-42.

Neither the specification nor the pleadings identify any inventive concept linked to the subject matter of the claims. The new allegations in the FAC refer to alleged improvements concerning “geo-coding” and low-resolution imagery, but these are untethered to the claims, which merely provide a confirmation dialog to a user.<sup>1</sup> D.I. 12 ¶ 26. “[A]n inventive concept cannot be concocted from the pleadings or the specification, it must be firmly rooted in the language of the claim,” and cannot derive from an “unclaimed feature.” *People.ai, Inc. v. SetSail Techs., Inc.*, 2021 WL 5882069, at \*6 (N.D. Cal. Dec. 13, 2021); *see also Yu v. Apple Inc.*, 1 F.4th 1040, 1045 (Fed. Cir. 2021) (noting that inventive concept must be claimed, not just described in specification); *Two-Way Media*, 874 F.3d at 1338-39 (same). Moreover, a patentee cannot rely on conclusory allegations of an inventive concept, nor purported benefits attributable to the abstract idea itself. *Yu v. Apple Inc.*, 392 F. Supp. 3d 1096, 1107 (N.D. Cal. 2019); *WhitServe LLC v. Donuts Inc.*, 390 F. Supp. 3d 571, 580-81 (D. Del. 2019) (patent and complaint failed to allege specific improvements in technology), *aff’d*, 809 F. App’x 929 (Fed. Cir. 2020).

Even as an ordered combination, the claim still fails to add anything “that is not already present when the elements are considered separately.” *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1241 (Fed. Cir. 2016) (citation omitted). Allowing a user to make and confirm a selection is a basic computer function. *See, e.g., Interval Licensing*, 896 F.3d at 1347 (allowing a user to select information to be displayed is one of the “most basic functions of a computer” and cannot supply an inventive concept). At best, the claims only “elaborate on known, conventional steps.” *SynKloud*, 490 F. Supp. 3d at 819.

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<sup>1</sup> To the extent Plaintiffs may rely on the rulings in *Xactware* (*see* D.I. 12 ¶ 22), the court’s conclusions in that case are unrelated to the claims asserted here. “[A]ny allegation about inventiveness, wholly divorced from the claims or the specification’ does not defeat a motion to dismiss; only ‘plausible and specific factual allegations that *aspects of the claims* are inventive are sufficient.’” *Dropbox, Inc. v. Synchronoss Techs., Inc.*, 815 F. App’x 529, 538 (Fed. Cir. 2020) (quoting *Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306, 1317 (Fed. Cir. 2019)).

## B. The '538 Patent

### 1. Step One of *Alice*

#### (a) The Claims Are Directed to an Abstract Idea

The claims of the '538 patent are directed to the abstract idea of estimating a roofing area using an image of a roof. Claim 1 is representative. The claim recites nothing beyond identifying a geographic location of a roof, determining a footprint and predominant pitch through some unspecified means using an image of the roof, determining an estimated roofing area based on the footprint and predominant pitch, and generating a report containing the referenced information and other conventional roofing information.

The '538 patent admits its key “innovation” is taking a traditional site visit by a roofing contractor and “doing it on a computer.” The patent explains that, historically, property owners undertaking roofing projects “contact[ed] one or more contractors for a site visit.” '538 patent, 1:10-14. These site visits required a contractor to be physically present, which might be costly, hazardous, and/or affected by issues such as timing and weather. *Id.*, 1:14-22. The '538 patent purports to solve these problems inherent in physically measuring a roof by “[e]stimating construction projects using software.” *Id.*, 1:31-34. Every step in the claims of the '538 patent has historically been performed manually by roofers. Thus, the claims are precisely the type of “mere instruction to ‘implemen[t]’ an abstract idea ‘on . . . a computer’” that the Supreme Court held to be patent ineligible in *Alice*. 573 U.S. at 223 (alterations in original) (citation omitted).

Even the idea of measuring a roof using an image, as opposed to performing on-site measurements, was already common as of the '538 patent, according to the specification: “[i]mages are currently being used to measure objects and structures within the structures within the images, as well as to be able to determine geographic locations of points with the image

when preparing estimates for a variety of construction projects, such as roadwork, concrete work, and roofing.” ’538 patent, 1:27-31. The patent merely implements these known techniques in software to “increase speed at which an estimate can be prepared, and . . . reduce labor and fuel costs associated with on-site visits.” *Id.*, 1:27-33. But “mere automation of manual processes using generic computers . . . does not constitute a patentable improvement in computer technology.” *Trading Techs.*, 921 F.3d at 1384 (citation omitted). Indeed, the ’538 patent does not even suggest that the techniques used to measure the roofing area from an image of a roof differ in any way from the conventional techniques used by roofers to measure a physical roof.

The “analysis” recited in the ’538 claims similarly adds no substance. The claims do not require any particular process for deriving “predominant pitch” or a “footprint of the roof”; these parameters are vaguely determined by “analyzing one or more image showing the roof.” ’538 patent, claim 1. Failing to recite how the predominant pitch or footprint are calculated is indicative of an abstract idea. *See Capital One*, 850 F.3d at 1342 (claims provided “only a results-oriented solution, with insufficient detail for how a computer accomplishes it”); *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1305 (Fed. Cir. 2018) (“[A] result, even an innovative result, is not itself patentable.”). Further, the patent admits these values can be determined using known prior art techniques. ’538 patent, 11:55-63. Determination of “an estimated roofing area” similarly does not involve any new or improved computer-based process—it merely implements in software the same basic math and geometry performed by roofers. *Id.*, claim 1; *see also id.* at 12:37-39 (stating that the “estimated area of the roof may be determined” by “[u]sing the predominant pitch and outer dimensions provided by the footprint”).

#### (b) The Claims Do Not Improve Computer Functionality

As with the ’800 patent, the claims of the ’538 patent invoke computer hardware “merely

as a tool” to implement an otherwise abstract idea. *Enfish*, 822 F.3d at 1336. Each of the recited steps could be performed manually by a person with access to physical photographs of a geographic location. *See also, e.g.*, ’538 patent, 1:27-31 (acknowledging that measuring objects from images was commonplace). For instance, claim 1 could be implemented by a person selecting an aerial image of a building, manually computing a predominant pitch and footprint of the roof using the image, estimating the roofing area by applying basic geometry, and entering this information into a report. Apart from “generic computer-implemented steps, there is nothing in the claim[] [itself] that foreclose[s] [it] from being performed by a human.” *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016).

In the FAC, Plaintiffs argue that the claims of the ’538 patent “obviate the need for a user to trace the outline of every facet of a target roof shown in an image and the need for a computer to calculate the pitch of each facet of the target roof in order to generate an accurate roof report.” D.I. 12 ¶ 24. But the claims do not recite (and the specification does not disclose) any such improvement. For example, claim 1 would encompass **any** method of computing a predominant pitch, and even the specification notes that the “predominant pitch” calculation may simply be a “weighted average of individual pitch factors.” ’538 patent, 12:12-14. In any event, even under Plaintiffs’ mischaracterization of the claims, the alleged “improvement” would still be an abstract idea (*i.e.*, a simpler mathematical formula) and not a technological improvement.

(c) Courts Have Routinely Held Similar Claims To Be Abstract

As with the ’800 patent, the claims of the ’538 patent are analogous to numerous claims that the Federal Circuit has previously held to be patent ineligible and directed to abstract ideas.

For example, in *University of Florida*, the claims at issue sought “to automate ‘pen and paper and methodologies’ to conserve human resources and minimize errors.” *Univ. of Fla.*

*Research Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1367 (Fed. Cir. 2019). The patent at issue acknowledged that health care facilities typically “acquire[d] bedside patient information using pen and paper methodologies, such as flowsheets and patient charts.” *Id.* The Federal Circuit concluded that this was “a quintessential ‘do it on a computer’ patent: it acknowledge[d] that data from beside machines was previously collected, analyzed, manipulated, and displayed manually, and it simply propose[d] doing so with a computer.” *Id.* There was no “‘specific improvement to the way computers operate.’” *Id.* at 1367-68 (quoting *Enfish*, 822 F.3d at 1336).

The Federal Circuit has also repeatedly held that claims, like those here, focused on “collecting information, analyzing it, and displaying certain results of the collection and analysis” are directed to an abstract idea. *Elec. Power*, 830 F.3d at 1353-56; *see also SAP*, 898 F.3d at 1167 (claims directed to abstract idea of “selecting certain information, analyzing it using mathematical techniques, and reporting or displaying the results of analysis”). *Electric Power* is particularly instructive here. There, the representative claim described a computer-based method generally designed to (i) receive specific types of data from multiple sources relating to a power grid; (ii) analyze certain stability metrics, (iii) display measurements and results of analyses, and (iv) derive a composite indicator of power grid vulnerability. *Elec. Power*, 830 F.3d at 1351-52. The Federal Circuit held that these steps amounted to nothing more than an abstract idea:

[W]e have treated collecting information, including when limited to particular content (which does not change its character as information), as within the realm of abstract ideas. . . . In a similar vein, we have treated analyzing information by steps people go through in their minds, or by mathematical algorithms, without more, as essentially mental processes within the abstract-idea category. . . . And we have recognized that merely presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis.

*Elec. Power*, 830 F.3d at 1353-54 (internal citations omitted).

The claims here recite a similar process: (a) collecting intangible information—*i.e.*, a

geographic location and corresponding image; (b) analyzing that information using basic mathematical algorithms (*e.g.*, to determine a footprint, a predominant pitch, and an estimated roofing area); and (c) displaying the results of the analysis (“the estimated roofing area”) and collected information (“at least one image showing the roof”). *See* ’538 patent, claim 1. Thus, this claim is just another variation of the collecting-analyzing-displaying claims that courts have consistently rejected. *See, e.g., NantWorks, LLC v. Niantic, Inc.*, 2021 WL 24850, at \*6 (N.D. Cal. Jan. 4, 2021) (“Providing map-related data based on . . . information about location . . . is just analyzing information about a location, which is data analysis and an abstract idea.”); *Jewel Pathway LLC v. Polar Electro Inc.*, 2021 WL 3621885, at \*5 (S.D.N.Y. Aug. 16, 2021) (claim reciting steps of “(1) receiving location data, (2) determining a path from the location data, (3) superimposing the path on a map, and (4) packaging that map for a display on a device” directed to abstract idea of “collecting, analyzing, and displaying data”).

## **2. Step Two of *Alice***

Claim 1 of the ’538 patent contains no inventive concept that survives *Alice* step two. *SAP*, 898 F.3d at 1168-70. Although the claim recites parameters that are computed and used—*e.g.*, “a footprint and predominant pitch” and “an estimated roofing area”—merely identifying mathematical operations does not render a claim patent eligible. *Id.* at 1169 (narrowed mathematical operations “add nothing outside the abstract realm”); *see also Mayo*, 566 U.S. at 88-89 (narrow embodiments of ineligible subject matter are still ineligible). Moreover, “merely selecting information, by content or source, for collection, analysis, and display does nothing significant to differentiate a process from ordinary mental processes.” *Elec. Power*, 830 F.3d at 1355; *see also id.* at 1354 (“[L]imiting the claims to [a] particular technological environment . . . is, without more, insufficient to transform them into patent-eligible applications of the abstract



idea at their core.”). Thus, the mere fact that the claims are limited to the *roofing* context and collect and display *roofing* information (*e.g.*, an image, predominant pitch, footprint, and estimated area of a roof) cannot save the claims.

The only computer hardware recited in the claims is a generic “computer processor,” which does not add an inventive concept. *See* ’538 patent, 2:24-27 (“The logic embodied in the form of software instructions, or firmware may be executed on any appropriate hardware which may be a dedicated system or systems.”); *see also* *SAP*, 951 F.3d at 1170; *Customedia Techs., LLC v. Dish Network Corp.*, 951 F.3d 1359, 1366 (Fed. Cir. 2020) (“Such generic and functional hardware is insufficient to render eligible claims directed to an abstract idea.”). To the contrary, the recitation of conventional hardware proves the claims are “simply a recitation of the ordinary capabilities of computers, applied in a particular context.” *SynKloud*, 490 F. Supp. 3d at 819.

Further, as with the ’800 patent, the complaint’s allegations of purported novelty are not tethered to the claims. Although the FAC asserts the claims are “inventive” and “unconventional” (D.I. 12 ¶¶ 24-25), such vague and conclusory allegations need not be accepted as true. *Simio, LLC v. FlexSim Software Prods., Inc.*, 983 F.3d 1353, 1365 (Fed. Cir. 2020) (courts may “disregard conclusory statements” that the claims improve the functioning of a computer). In addition, as noted above, Plaintiffs’ allegation that the claimed invention “obviate[s] the need” to trace the outline of every facet of a roof and calculate the pitch for each (D.I. 12 ¶ 24) at best seeks to claim the abstract idea of using a predominant pitch algorithm. Plaintiffs have not identified any improvements in technology or benefits attributable to the claims of the ’538 patent beyond the abstract idea itself—estimating a roofing area using an image of a roof. *See Yu*, 392 F. Supp. 3d at 1107 (“portions of the [asserted patent] and the complaint” that touted purported benefits were akin to those “that flow[ed] from performing an

abstract idea in conjunction with a well-known” technology (citation omitted)).<sup>2</sup>

Consideration of the claims as an ordered combination does not alter the outcome. There are no specific allegations, or any intrinsic evidence, that any of the recited components are used in an unconventional or non-generic way. “Appending rote conventional activity . . . to an abstract idea does not amount to an inventive concept.” *Interval Licensing*, 896 F.3d at 1348.

## **C. The ’840 Patent**

### **1. Step One of *Alice***

#### **(a) The Claims Are Directed to an Abstract Idea**

The claims of the ’840 patent are directed to the abstract idea of determining the pitch of a roof section using an aerial image of a roof. Claim 1 is representative and requires little more than displaying a virtual protractor tool overlaid on an aerial image of a roof, allowing a user to manually determine and input a pitch for a planar roof section, and modifying an unspecified model of the roof based on this determination.

As the specification acknowledges, the essence of the alleged invention is the determination of roof measurements from aerial images of a roof. *See* ’840 patent, 1:16-20. Similar to the ’538 patent, the specification notes that that the alleged invention is simply a software-based alternative to physical site visits that enables roofing contractors to perform measurements on an image of a roof rather than on-site. *Id.*, 1:25-53, 1:63-2:10.

The ’840 patent acknowledges that taking measurements of a roof is an age-old practice. *See id.*, 1:25-34. Nor does the patent claim to have invented measuring objects in images or any unconventional technique for doing so, as the FAC suggests (D.I. 12 ¶ 23). To the contrary, the

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<sup>2</sup> Plaintiffs also assert that the ’538 patent is eligible because it overcame a rejection under § 101. D.I. 12 ¶ 25. But the district court must ultimately reach its own independent conclusion on eligibility. *See Exmark Mfg. Co. Inc. v. Briggs & Stratton Power Prods. Grp., LLC*, 879 F.3d 1332, 1341 (Fed. Cir. 2018).

patent discloses a “protractor tool,” analogous to a conventional protractor, that is overlaid on an aerial image of a roof and manipulated by the user. *Id.*, 12:40-54. Accordingly, the “claimed advance over the prior art” is nothing more than displaying a virtual protractor for a user to use. *Affinity Labs*, 838 F.3d at 1257. But “relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.” *OIP Tech., Inc. v. Amazon.com*, 788 F.3d 1359, 1361 (Fed. Cir. 2015); *see also Neochloris, Inc. v. Emerson Process Mgmt. LLP*, 140 F. Supp. 3d 763, 774 (N.D. Ill. 2015) (finding ineligible claims directed to a “process that a person could do with pen and paper” by manually measuring pH of water).

The vague recitation of “modifying a model of the roof” does not add any substance to the claims that would render them not abstract. The claims do not recite any unconventional technique for modifying the model—indeed, they do not even require the modification to be performed automatically or by the computer, as opposed to manually by a user. The specification expressly contemplates that “generating a 3D model of a roof” may be effected based on “operator inputs specifying various features and/or dimensional attributes of the roof,” and expressly teaches that the model generation may in large part be performed by a human “operator.” *E.g.*, ’840 patent, 3:16-19, 4:44-48, 5:2-6, 5:10-12, 5:44-47, 5:53-57, 6:7-10.

(b) The Claims Do Not Improve Computer Functionality

Like the other asserted patents, the ’840 patent invokes generic computer hardware “merely as a tool” to implement an otherwise abstract idea. *Enfish*, 822 F.3d at 1336. To be eligible, a software invention must make “*non-abstract improvements* to existing technological processes and computer technology.” *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1149 (Fed. Cir. 2019) (emphasis added). But the ’840 patent does not solve a technological problem; rather, it takes a well-known pre-computer task—using a protractor to

measure an angle of an object in an image—and proposes doing it with a computer. *See also Encyclopedia Britannica, Inc. v. Dickstein Shapiro LLP*, 128 F. Supp. 3d 103, 112 (D.D.C. 2015) (finding ineligible claims that were “essentially variations of activities humans have performed for thousands of years using paper maps and other reference works”). Indeed, as with the ’538 patent, the claims could be performed manually by any person with access to an aerial image and a protractor. Apart from “generic computer-implemented steps, there is nothing in the claim[] [itself] that foreclose[s] [it] from being performed by a human.” *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1318 (Fed. Cir. 2016).

(c) Courts Have Routinely Held Similar Claims To Be Abstract

Like the claims of the ’538 patent, the ’840 patent seeks “to automate ‘pen and paper and methodologies’ to conserve human resources and minimize errors,” and is thus comparable to numerous cases where the Federal Circuit found patents to be ineligible. *Univ. of Fla.*, 916 F.3d at 1367. In particular, the ’840 patent takes a long-standing practice—measuring the angle of an object (here, a section of a roof)—and “simply proposes doing [it] with a computer,” without claiming “any ‘specific improvement to the way computers operate.’” *Id.* at 1367-68 (quoting *Enfish*, 822 F.3d at 1336). Thus, the claims “merely implement an old practice in a new environment.” *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1094 (Fed. Cir. 2016).

The Federal Circuit has held that similar claims directed to user interfaces for displaying conventional information are patent-ineligible. *See, e.g., Elec. Power*, 830 F.3d at 1352 (claims reciting “visualization of measurements” and “updating the measurements”); *Trading Techs.*, 921 F.3d at 1384-85 (claims directed to “indicator[s]” of price and market information). District courts have similarly found abstract claims directed to using computers provide information about a map or an image. *See, e.g., CertusView*, 111 F. Supp. 3d at 709 (finding ineligible

claims directed to receiving an image of a dig area, displaying the information, and overlaying a representation of location marks on the image); *Encyclopedia Britannica*, 128 F. Supp. 3d at 112 (finding ineligible claims directed to displaying a map and place indicators in response to user inputs, and allowing user to select a location on the map).

## 2. Step Two of *Alice*

Claim 1 of the '840 patent fails to recite an inventive concept that survives *Alice* step two. *SAP*, 898 F.3d at 1168-70. The claims require little more than overlaying a virtual protractor onto an aerial image. They do not even require the **computer** to compute a pitch or modify a model of the roof. Instead, as claimed and disclosed, these steps may be performed manually by an operator. Thus, to the extent the claims require a computer at all, the computer merely performs routine, patent-ineligible functions such as receiving and displaying information. *See Two-Way Media*, 874 F.3d at 1339. The specification confirms that the alleged invention may be implemented using generic computer hardware, such as a “memory,” a “display,” a “CPU,” and “Input/Output devices,” such as a keyboard or mouse. '840 patent, 16:20-25. Similarly, the “graphical user interface” may be “used by a human user operating the operator computing system” “via a Web server.” *Id.*, 17:34-50; *see also SAP*, 951 F.3d at 1170.

Although the claims are limited to roof measurements, “limiting the claims to [a] particular technological environment . . . is, without more, insufficient to transform them into patent-eligible applications of the abstract idea at their core.” *Elec. Power*, 830 F.3d at 1354.

Further, the complaint’s allegations of purported advantages are untethered to the claims and thus cannot supply an inventive concept. Plaintiffs’ alleged “inventive concepts” and “technological improvements” refer to functionality that is not recited in the claims. *See* D.I. 12 ¶ 23. Plaintiffs have not identified any specific improvements in technology or purported

benefits attributable to the claims of the '840 patent themselves. *People.ai*, 2021 WL 5882069, at \*7 (noting that the claims “do not recite the inventive concept [Plaintiffs] have proffered”).

Consideration of the claims as an ordered combination does not alter the outcome. Neither the specification nor the complaint suggest that any of the recited components are used in an unconventional or non-generic way. *See Interval Licensing*, 896 F.3d at 1348.

#### **D. Representative Claim Analysis**

“The Federal Circuit has held that the district court is not required to individually address claims not asserted or identified by the non-moving party, so long as the court identifies a representative claim and ‘all the claims are substantially similar and linked to the same abstract idea.’” *Pragmatus Telecom, LLC v. Genesys Telecomms. Labs., Inc.*, 114 F. Supp. 3d 192, 198-99 (D. Del. 2015) (quoting *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1348 (Fed. Cir. 2014)); *see also Elec. Power*, 830 F.3d at 1352. Here, claim 1 of the '800 patent, claim 1 of the '538 patent, and claim 1 of the '840 patent are representative of the other claims in the respective asserted patents because every claim in the asserted patents is “substantially similar and linked to the same abstract idea[s]” to which the representative claims are directed.<sup>3</sup> *Pragmatus*, 114 F. Supp. 3d at 199 (citation omitted).

Each independent claim of the '800 patent generally relates to the same process for designating a building roof structure in an image that corresponds to a geographic location, confirming that designation, and generating a roof report, with only slight variations. Similarly, each independent claim of the '538 patent generally covers the same processes for providing a roofing estimate and generating a roof report, with only variations in minor details. And each

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<sup>3</sup> The complaint only expressly identifies claim 1 of the '800 patent, claims 1, 6, 7, and 14 of the '538 patent, and claim 1 of the '840 patent as infringed, merely asserting that “other” unidentified claims, “including system claims,” are also infringed. D.I. 12 ¶ 31 n.13.

independent claim of the '840 patent generally recites overlaying a pitch determination marker on an aerial image to indicate pitch and modify a model of the roof based on that indication.

At best, the dependent claims of the asserted patents narrow the abstract ideas to which the independent claims are directed, but they do not introduce any inventive concepts. For example, the dependent claims of the '800 patent merely recite additional information that is displayed (such as an “outline drawing” or dimensions); the dependent claims of the '538 patent recite additional generic computer components (such as a “host system”) and additional dimensions or parameters to be computed and/or provided in the report; and the dependent claims of the '840 patent recite additional user interface components that may be provided and/or additional information that may be displayed or transmitted.

The FAC itself does not identify any dependent claims that are meaningfully distinct from the representative independent claims—except for claims 6 and 7 of the '538 patent, which “require validation of the ‘geographic location of the roof.’” D.I. 12 ¶¶ 25. The “validation” of the '538 patent, however, does not employ any technological improvement or inventive concept; rather, it is indistinguishable from the abstract idea claimed by the '538 patent and merely requires “receiving customer input” such as “coordinate of [a] geographic location.” *See* '538 patent, claims 6-7. The specification confirms that the “customer input” is effected using conventional user interfaces, such as “drag-and-drop elements” or “manual manipulation” of coordinates. *Id.*, 9:65-10:4. Thus, the additional limitations of these dependent claims are insufficient to transform the claims into a patent-eligible invention.

## **VII. CONCLUSION**

Roofr respectfully requests that the Court find, as a matter of law, that the asserted patents are invalid under 35 U.S.C. § 101 and dismiss the FAC with prejudice.

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May 6, 2022



**CERTIFICATE OF SERVICE**

I hereby certify that on May 6, 2022, I caused the foregoing to be electronically filed with the Clerk of the Court using CM/ECF, which will send notification of such filing to all registered participants.

I further certify that I caused copies of the foregoing document to be served on May 6, 2022, upon the following in the manner indicated:

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